

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number  
**WO 2005/056827 A1**

(51) International Patent Classification<sup>7</sup>: C12Q 1/68

(21) International Application Number:  
PCT/CA2004/002118

(22) International Filing Date:  
13 December 2004 (13.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/528,748 12 December 2003 (12.12.2003) US

(71) Applicant (for all designated States except US): **INFECTIO RECHERCHE INC.** [CA/CA]; 2795, boul. Laurier 200, Ste-Foy, Quebec G1V 4M7 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BISSENETTE**, Luc [CA/CA]; 4475 rue Bluteau, Quebec, Quebec G2B 4L4 (CA). **RAYMOND**, Frédéric [CA/FR]; 5, rue Alexandre Cabanel, FR-43000 Montpellier (FR). **PEY-TAVI**, Régis [CA/CA]; 504, rue de l'Eglise, App. 3, St-Romuald, Quebec G6W 3J1 (CA).

(74) Agents: **DUBUC**, J. et al.; Goudreau Gage Dubuc, Stock Exchange Tower, 800 Place Victoria, Suite 3400, P.O. Box 242, Montreal, Quebec H4Z 1E9 (CA).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM FOR CHARGE-BASED DETECTION OF NUCLEIC ACIDS

(57) **Abstract:** This present invention relates methods for detecting the presence of nucleic acids in a sample. In these methods, neutral capture probes are exposed to a sample possibly containing complementary nucleic acid targets. The foregoing mixture is submitted to conditions that provide for the nucleic acid targets to bind with the neutral probes thereby generating hybrids. These hybrids are submitted to positively charged reporters such as atoms, molecules or macromolecules, which electrostatically bind to the hybrids. The complexes formed between reporters and hybrids are detected by a variety of detection methods. Kits for detecting the presence of nucleic acids in a sample are also disclosed herein.

WO 2005/056827 A1